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A new species of *Habralictus* (Hymenoptera, Halictidae) from the Island of Grenada (Lesser Antilles) with comments on the insular species of the genus

Allan H. Smith-Pardo

1 *United States Department of Agriculture (USDA), APHIS-PPQ, 389 Oyster Point Blvd. Suite 2, South San Francisco, CA. 94080 & California Academy of Sciences, 55 Music Drive Course, Golden Gate Park, San Francisco, CA. 94118*

urn:lsid:zoobank.org:author:506BD339-8CCF-48A7-91E7-7EF3781C5113

Corresponding author: *Allan H. Smith-Pardo* (allan.h.smith-pardo@aphis.usda.gov)

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Abstract

A new species of the genus *Habralictus* Moure (Apoidea, Halictidae, Caenohalictini), *Habralictus insularis* **sp. n.,** is described from the island of Grenada. A diagnosis of the genus and comments on its taxonomy and patterns of distribution are presented.

Keywords

Apoidea, Halictidae, bees, island, taxonomy, Lesser Antilles

Introduction

The genus *Habralictus* was first defined by Moure (1941) to include a series of Neotropical halictid bee species, many of them then new to science, as well as others previously included in other genera (such as *Augochlora*, *Neocorynura*, and *Halictus*). To date 23 species have been recognized in the genus (Moure and Hurd 1987, Moure 2008), the last described being *Habralictus bimaculatus* Michener from the mountains (at

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2000m) of the Departamento of Valle del Cauca in Colombia (Michener 1979). The genus is to this moment unrevised, with many species undescribed. For example, in a survey of a relatively small area in Colombia, Smith-Pardo (1999) found six *Habralictus* species, of which only one was described. The species of *Habralictus* are found only in the Western Hemisphere from the State of Paraná in Brazil to the State of Jalisco in México. Most described species are from the continental mainland; the only previously known insular species is *H. claviventris* (Ashmead, 1900) from the island of Saint Vincent in the Lesser Antilles. This species was described more than a century ago from the so called "Windward" (Eastern) side of the island at 1500 ft (≈ 457m).

Habralictus are characterized by their overall small size (body length around 4–6 mm), sculpturing of the head and mesosoma (minutely granulate and dull); pubescence of the compound eyes (bare or sometimes with scattered, short setae); coloration (head and mesosoma black or dark brown to bright green or coppery, clypeus, pronotal lobe, and legs with yellow maculation); second submarginal cell with anterior margin short, and third submarginal cell almost square; metasoma reddish brown or black sometimes with spots or bands on terga); males with antennae elongate, scape broad, and metasoma petiolate (Moure 1941; Michener 2007).

The species described herein, *H. insularis* sp. n., is similar to *H. claviventris* and is described from the Grenada in the Lesser Antilles. The species is remarkable in that in addition to its insular distribution it encompasses characters of the two subgenera previously described (Michener 2007), supporting the synonymy of these groups advocated by Moure et al. (2007).

Materials and methods

The morphological description and illustrations were made using a Nikon SMZ1500 stereomicroscope, with 1× lens HR Plan Apo 1X WD54. Photographs were taken using a Nikon Digital Sight DS-Fi1 and processed using the software Helicon Focus® vs. 4.03.1. and Photoshop Elements® 6.0. (Adobe). Morphological terminology follows that of Michener (2007) and Harris (1979) for surface sculpturing. Format for the description follows that of Engel (2000) and Smith-Pardo (2005). The abbreviations F, S, T, and OD are used for antennal flagellomere, metasomal sternum and tergum, and ocellar diameter, respectively. Acronyms for collections where specimens are deposited: Department of Entomology, California Academy of Sciences, San Francisco, CA, USA (CAS); American Museum of Natural History, New York, NY, USA (AMNH); and Division of Entomology, University of Kansas Natural History Museum, Lawrence, KS, USA (SEMC).

Systematics

Genus *Habralictus* Moure

Comments. Previous authors have recognized two subgenera – *Habralictus* s.str. and *Zikaniella* – based on characters such as the width of head and genae, the concavity of the clypeus, and the shape of the metatibial spur serrate or pectinate (Michener 2007). The species described herein combines some of these characters (clypeus not concave and flat, genae narrower than compound eyes, and pectinate metatibial spurs), supporting the unification of the subgenera as used by Moure et al. (2007).

Habralictus insularis sp. n.

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Figs 1–2

Type material. *Holotype:* ♀. Grenada: Grand Etang N.P. [National Park]. Mt. Qua Qua trail. IX-7-1991. on: palm flowers. C.W. and L.B. O'Brien Collectors. (CAS)

Paratypes: 9♀♀, 3♂♂, same data as holotype [CAS]; 1♀ 1♂ *idem* [KSEM]; 1♀ *idem* [AMNH]. 1♂ *idem*, except on palm flowers, *Euterpe precatoria* Mart. [CAS].

Diagnosis. Males of *H. insularis* sp. n. are mostly similar to those of *H. claviventris* (also from the Lesser Antilles) but can be recognized by the larger yellow, integumental spot on the clypeus that covers its anterior half, and the presence of a circumocular carina (Fig. 1h); the base of the propodeum granulate medially (Fig. 1g) (striate in *H. claviventris*), and the metafemur and metatibia dark brown (yellow in *H. claviventris*). Females of *H. insularis* sp. n. resemble females of *H. bimaculatus* in the overall coloration of the metasomal integument but differ from it by not having any spots or bands on the terga (Fig. 1c).

Description. *Female*. Total body length 4.35 mm; forewing length 3.43 mm. Head slightly wider than long. Scape longer than combined length of F1–F6; F10 as long as F9; F2 subequal in length to F1. Clypeus with upper margin above lower tangent of compound eyes, paraocular lobe, 160°. Scutum wider than long; metanotum 0.4× scutellar length. Mid tibial spur serrate, half length of basitarsus; inner hind tibial spur with four teeth (including apex); 1m-cu confluent with second submarginal crossvein; 2m-cu basad to 2rs-m by 3× vein width; first submarginal cell as long as combined lengths of second and third submarginal cells; second submarginal cell with anterior margin shorter than anterior margin of third submarginal cell; hamuli spaced 1-1-1-2. Basal area of propodeum as long as combined length of scutum and scutellum. Metasoma more or less flat and semi-petiolate.

Mandible with weak acetabular groove. Labrum flat without sulcus or central process. Clypeus, supraclypeal, and paraocular areas minutely but strongly granular, punctures present on lower third of clypeus, close together; remainder of face and vertex strongly granulate; gena and postgena imbricate. Scape imbricate, with

Figure 1. External characters of *H. insularis* sp. n.: **a** habitus female, lateral view **b** habitus male, lateral view **c** female metasoma, dorsal view **d** scutellum, metanotum and base of propodeum (female) **e** female head, frontal view **f** female pygidial plate **g** scutellum, metanotum and base of propodeum (male) **h** male head, frontal view.

few punctures. Pronotum imbricate. Mesoscutum minutely and closely granular with some minute punctures broadly distributed, integument of granules smooth; mesoscutellum and metanotum granular but slightly more coarsely punctate than

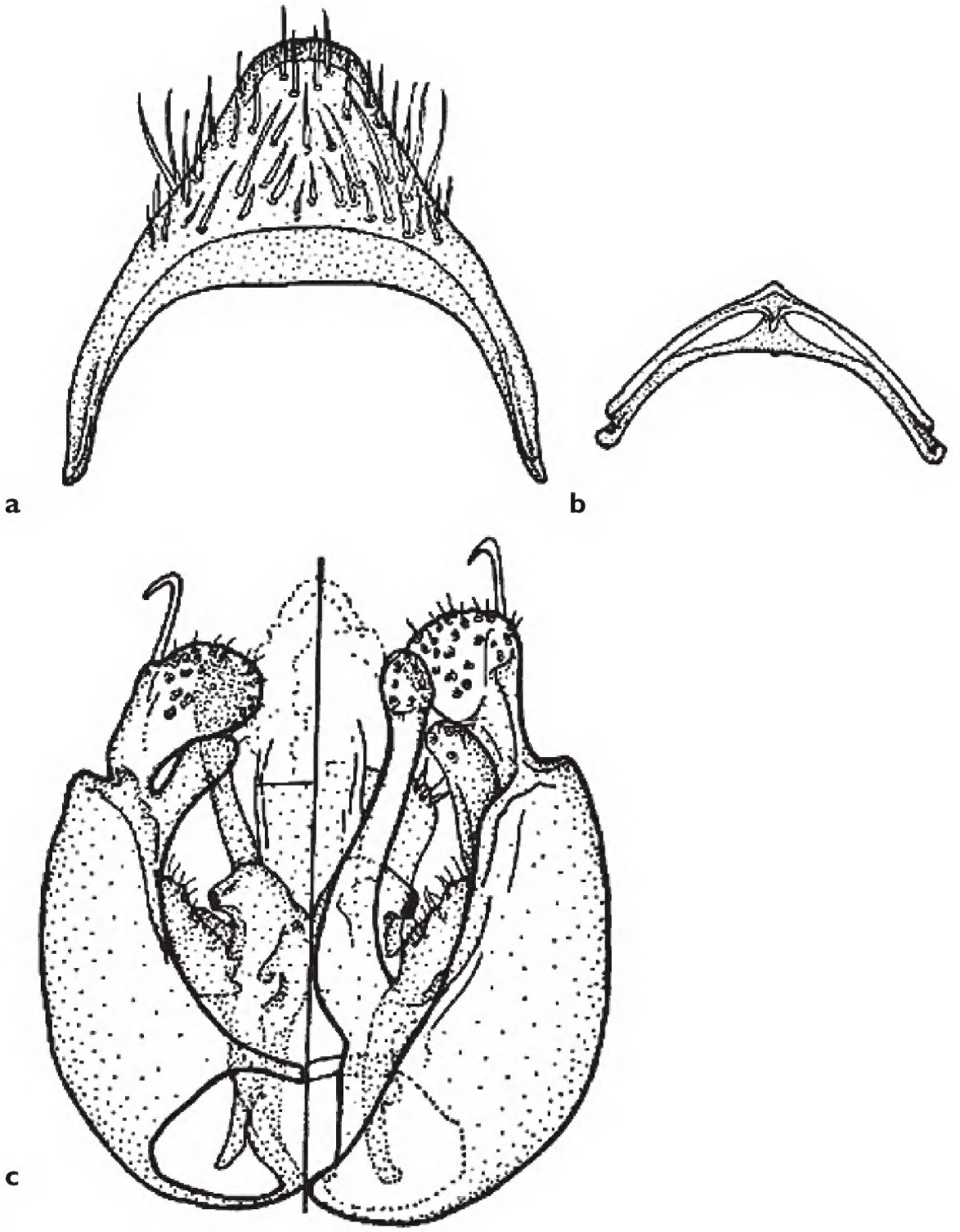

Figure 2. Terminalia of the male of *H. insularis* sp. n.: **a** T6 **b** S7+S8 **c** genital capsule: left, ventral view, right, dorsal view.

mesoscutum. Mesepisternum strongly granular. Tegula imbricate. Basal third of propodeum granular, distal two-thirds imbricate except for granular strip medially. Metasoma imbricate.

Head and mesosoma mainly metallic green except as follows: mandible, labrum, distal half of clypeus yellow; antennae brown, tibiae and tarsi light brown; middle of clypeus brown, supraclypeal area and paraocular area with coppery reflections; reddish on base of clypeus and supraclypeal area. Mesoscutum between parapsidal lines yellowish, with coppery reflections. Pronotal lobe yellow. Tegula light brown and semi-translucent; wing veins and pterostigma dark brown. T1–T3 mostly dark brown with

light brown to yellowish spot medially, T4–T5 mostly yellow but light brown laterally. Sterna mostly yellow, light brown on margins.

Head with yellowish, erect branched setae (0.5–2.5 OD), longer on labrum and gena, darker on clypeus and genae, lighter on vertex and postgenae. Mesoscutum, mesoscutellum, and metanotum sparsely covered with brownish, erect short setae (0.5≤ OD) intermingled with some dark brown and longer setae along margins; metanotum with longer setae (1 OD) broadly distributed. Posterior margin of pronotal lobe densely covered with whitish tomentum and with some short setae (0.5 OD) broadly distributed along pronotum. Ventral area of mesepisternum, lateral and posterior surfaces of propodeum, and sides of metanotum with broadly distributed, long (1.5–3 OD), branched, light brown setae, shorter on mesepisternum and metepisternum. Legs mainly with light brown setae. T1 with sparser, long (1–1.5 OD) branched yellowish setae on basal third, shorter on sides, distal half almost bare. T2 with minute, unbranched setae distributed over most of surface, longer (0.5–0.75 OD) and branched on sides. T3–T5 with two types of setae: broadly distributed, appressed, short brownish setae, and longer, branched and more dense distributed setae on sides of terga; setae longest on terminal terga. S1–S4 with long (1–3 OD), yellowish, and poorly branched setae.

Male. As described for the female except for usual sexual characters and the following: total body length 4.15 mm; forewing length 3.1 mm. Head wider than long. Paraocular lobe 130°. Scape as long as combined length of F1 and F2; F1 0.5× length of F2. Inner metatibial spur serrate, 0.4× length of metabasitarsus. Third submarginal cell with anterior margin three times longer than anterior margin of second marginal cell; hamuli spaced 2-1-2. Basal area of propodeum 1.2× mesoscutellar length. Metasoma more elongate than in female, semi-petiolate. T6, S7+S8, and genital capsule as in figure 2.

Mesepisternum and metepisternum imbricate, more weakly imbricate close to sternal area. Basal area of propodeum imbricate, areolate along margin in contact with metanotum. Sides of mesoscutum, mesoscutellum, metanotum, and propodeum with weak coppery to yellowish reflections. Metasoma dark brown.

Pubescence in general longer and more broadly distributed than in female. Sterna broadly covered with setae 1–1.5 OD in length, appressed, and with few branches yellowish setae.

Etymology. The specific epithet refers to the Latin term for "islands", in reference to the distribution of the species on the Island of Grenada.

Host records. The type series was collected visiting inflorescences of palms (Palmaceae) and, in fact, many of the females still have some of the pollen loads attached. Only one specimen (male) has the species of palm indicated on the collecting label (*Euterpe precatoria* Mart.).

Discussion

This is the only known species of *Habralictus* on the Island of Grenada, and the second species known to inhabit the West Indies. Both species may be endemic to their respective islands: Grenada and Saint Vincent, both in the Lesser Antilles. The discovery of this species is of interest and may well be an example of dispersion followed by speciation on islands. Acccording to current distribution records and the morphological similarities of *H. claviventris*, *H. insularis* sp. n., and *H. bimaculatus* from continental South America, it seems plausible to hypothesize that the common ancestor of the two insular species dispersed from mainland South America into Grenada and from there to the other islands including St. Vincent.

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